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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/683,286	12/10/2001	Tadashi Takano	SIMTEK6227	8443

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EXAMINER

LE, DANG D

ART UNIT PAPER NUMBER

2834

DATE MAILED: 03/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/683,286

Applicant(s)

TAKANO ET AL.

Examiner

Dang D Le

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 January 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4,5,7,9,11,13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7,9,11,13 and 14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1, 2, 4, 5, 7, 9, 11, 13, and 14 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
4. Claims 1, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konecny in view of Kondo et al.

Regarding claim 1, Konecny shows all of the limitations of the claimed invention except for the coil windings of said groups having their windings connected to each other. Konecny shows the coil windings of the groups being continuously.

Kondo et al. show the coil windings (2) of the groups having their windings connected to each other (with 7) for the purpose of reducing time.

Since Konecny and Kondo et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to separate the windings and connect them to each other as taught by Kondo et al. for the purpose discussed above.

Regarding claims 13 and 14, it is noted that Konecny and Kondo et al. also show all of the limitations of the claimed invention.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Konecny in view of Kondo et al. as applied to claim 1 above, and further in view of Kordik.

Regarding claim 2, the machine of Konecny modified by Kondo et al. shows all of the limitations of the claimed invention except for one of the cores and the permanent magnets disposed in nonsymmetrical relation to the axis of rotation of said machine.

Kordik shows one of the cores and the permanent magnets disposed in nonsymmetrical relation to the axis of rotation of said machine for the purpose of providing a constant positive torque.

Since Konecny, Kondo et al., and Kordik are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to dispose one of the cores and the permanent magnets in nonsymmetrical relation to the axis of rotation of said machine. as taught by Kordik for the purpose discussed above.

6. Claims 4, 5, 7, 9, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Konecny in view of Kondo et al. and Kordik as applied to claim 2 above, and further in view of Suzuki et al.

Regarding claim 4, the machine of Konecny modified by Kondo et al. and Kordik shows all of the limitations of the claimed invention including all the permanent magnets being of substantially of the same shape except a circumferential offset angle of each permanent magnet from a regularly disposed position being set such that a cogging number per rotation of the rotor is equivalent to as the least common multiple of the number S of slots between the electrical winding cores and the number P of magnetic poles.

Suzuki et al. show a circumferential offset angle of each permanent magnet from a regularly disposed position being set such that a cogging number per rotation of the rotor is equivalent to as the least common multiple of the number S of slots between the electrical winding cores and the number P of magnetic poles (Figure 6) for the purpose of reducing irregularity of the rotation.

Since Konecny, Kondo et al., Kordik, and Suzuki et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to set a circumferential offset angle of each permanent magnet from a regularly disposed position such that a cogging number per rotation of the rotor is equivalent to as the least common multiple of the number S of slots between the electrical winding cores and the number P of magnetic poles as taught by Suzuki et al. for the purpose discussed above.

Regarding claim 5, it would have been obvious to one having ordinary skill in the art at the time the invention was made to determine the magnitude of the torque exerted on each permanent magnet separately by a computer numerical analysis and peaks or bottoms of the torque curves of said permanent magnets are offset from each other with respect to the rotation angle of the rotor so that the cogging number is increased, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 7, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the number S of slots eighteen, the number P of magnetic poles twelve, and divide the twelve permanent magnets are into four sets, each set comprising three circumferentially adjacent permanent magnets, the circumferential pitch angle of the three permanent magnets of each set being 26.7 degrees and the circumferential pitch angle of adjacent two permanent magnets

between the sets being 36.60 degrees, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 9, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the number S of slots eighteen, the number P of magnetic poles twelve, and divide the twelve permanent magnets into four sets, two of said four sets comprising three circumferentially adjacent permanent magnets, the circumferential pitch angle of the three permanent magnets of each set being 26.7 degrees and the circumferential pitch angle of permanent magnets within the other two sets disposed at a symmetrical position being 33.3 degrees, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 11, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the number S of slots eighteen, the number P of magnetic poles twelve, and divide the twelve permanent magnets into four sets of three circumferentially adjacent permanent magnets, the circumferential pitch angle of the three permanent magnets of each set being 28.3 degrees circumferential pitch angles of adjacent permanent magnets between adjacent different sets being set to 33.3, 28.3, 33.3, and 28.3 degrees circumferentially in this order, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

### **Conclusion**

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Information on How to Contact USPTO***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (703) 305-0156. The examiner can normally be reached on Monday through Friday.

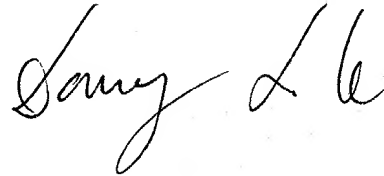
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

A handwritten signature in cursive script, appearing to read "Sony L. G.", is positioned in the upper right quadrant of the page.

March 25, 2003